
Pneumatic Rotary Hammer Drill

also for underwater application

Type 2 2417 0010



Illustration can differ from the original

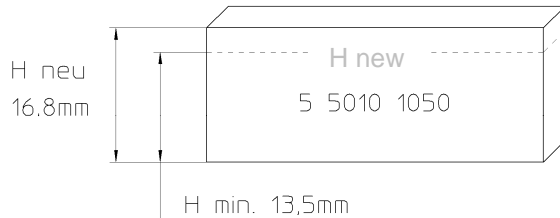
Repair Manual and Spare Parts List

REPAIR INSTRUCTION

Disassembly

Disassembly should only be executed according to the sectional drawing.

The vanes are worn and should be exchanged in time, if the height H is less than 13.5 mm.



Loosen screws item 25, remove motor housing cover item 23, Belleville spring item 22 and thrust collar item 21. Completely pull out end plates items 17 and 7 with rotor item 15, cylinder bushing item 12 and vanes item 16, pull end plate item 17 from the rotor journal. Mostly the end plate item 17 may as well just be pulled from the rotor journal. Further disassembly is then no more necessary normally. Withdraw vanes from the rotor slots and replace with new vanes. Slide end plate onto rotor journal. Pay attention to the spacer item 20. Insert thrust collar and Belleville spring and fix the motor housing cover.

Motor/ Handle

Loosen screws (items 29 and 67). Remove the motor with handle from the gearbox. Separate the handle (item 50) from motor housing after removing the screws (item 66).

Attention! The oil pocket is thus opened.

Screw out nipple (items 60/70). Remove compression spring (item 58), ball (item 57) and valve pin (item 56). Strike out the double-notched pin (item 55) and pull the valve trigger (item 54) out of the guide. Loosen screws (item 25), remove motor housing cover (item 23), withdraw Belleville spring (item 22) and thrust collar (item 21). Pull out complete interior motor parts and continue to disassemble. Light hitting with a rubber hammer on the geared output may help with this. Canting of the interior parts should be avoided. Remove the end plate (item 17) with spacer (item 20) from the rotor journal. Remove the cylinder bushing (item 12) and pull the vanes (item 16) out of the rotor slots. Remove the gasket (item 9) and screw the pinion (item 6) out of the rotor (item 15). Remove the end plate (item 7) and spacer (item 11) from the rotor journal. The sealing body (item 2) normally remains in the motor housing (item 1), but can be pulled out. Screw the silencer (item 26) out of the motor housing (item 1).

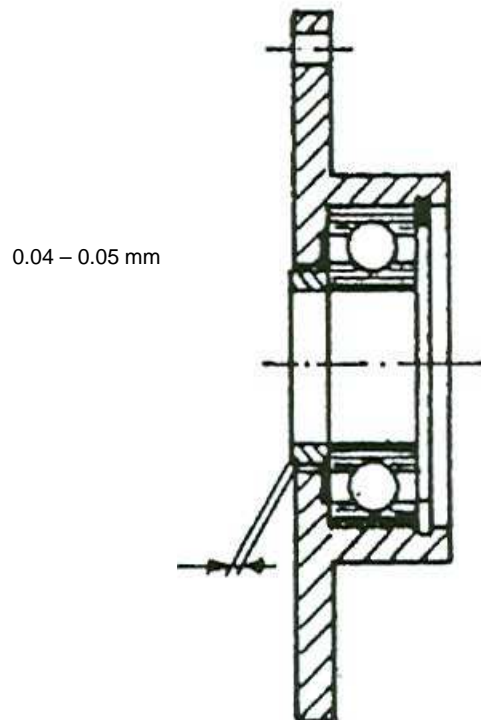
Assembly

Before assembly, the rotor slots should be cleaned from remainders of resin and oil. The new vanes item 16 must fall easily into the slots. Assembly is then done in the reverse order.

Attention:

If the bearing item 8 + 18 has been exchanged, the clearance must be checked in any case and be brought to the designated measure with a new spacer items 11 + 20, if necessary (Fig. b). The spacer should stand 0.04 to 0.05 mm in front of the end plate item 7 + 17. Here the interior ring of the ball bearing must previously be pressed in the direction of the snap ring item 10 + 19 free from backlash. The interior chamfers of the spacers face the plane surfaces of the rotor.

Fig. b



After assembly of motor and handle, the following has to be checked:

- I. Impermeability of the oil reservoir (sealing of the motor housing to the handle)
- II. Function of the valve (trigger, pin, ball, lock spring)
- III. Motor run (motor must be easily turned by hand – free run)
- IV. Measure speed (at 6 bar, free speed of at least 14,000 rpm should be achieved).

Should the rotor turn with difficulty or not at all, a “setting hit” will mostly help. By light hitting with a rubber hammer in lateral and/ or axial direction to the motor housing, the rotor is set into its position. If the rotor continues to clamp, after removing

- a) the clearance fit
(check once more as described under “the clearance”)
- b) the rotor length to the length of the cylinder bushing
(the rotor must be 0.1 to 0.13 mm shorter than the length of the cylinder bushing)
- c) the dimensions of the vanes
(the vanes may not be exposed in the diameter and length of the rotor)

Spare Parts

Only original spare parts may be used. There is no warranty for damages and liability is disclaimed, if non-original spare parts and accessories are used.

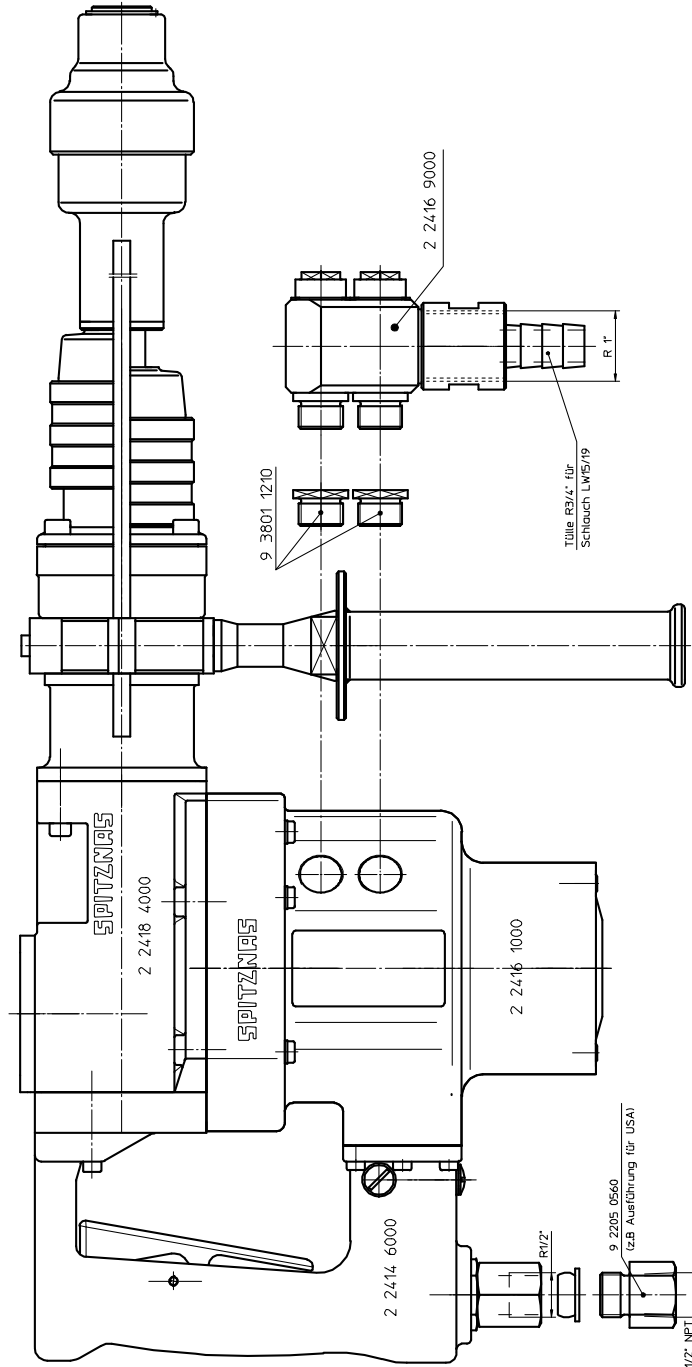


**Pneumatic Rotary Hammer Drill
2 2417 0010**

Spare Part List				
Description:			Part and drawing number:	
Pneumatic Rotary Hammer Drill			2 2417 0010	
Item	Qty.	Description	Part and drawing no.	Remarks
	1	Motor with handle	2 2416 1900	see extra list
	1	Gearbox head	2 2418 4000	see extra list
	1	Exhaust air connection, Assy.	2 2416 9000	see extra list
	1	Hammer grease Spitznas Long-Life C 1	9 9902 0250	
	1	Hexagonal screw driver SW 4	9 1314 0040	
	1	Spanner SW 13	9 1301 0160	
	1	Spanner SW 24	9 1301 0100	
	1	Spanner SW 27	9 1302 0010	
	1	Spanner SW 36	9 1316 0270	
	1	Hammer drill SDS max Ø16x 340 Shank Ø18	9 2513 1850	
	1	Transport case	9 9910 0080	

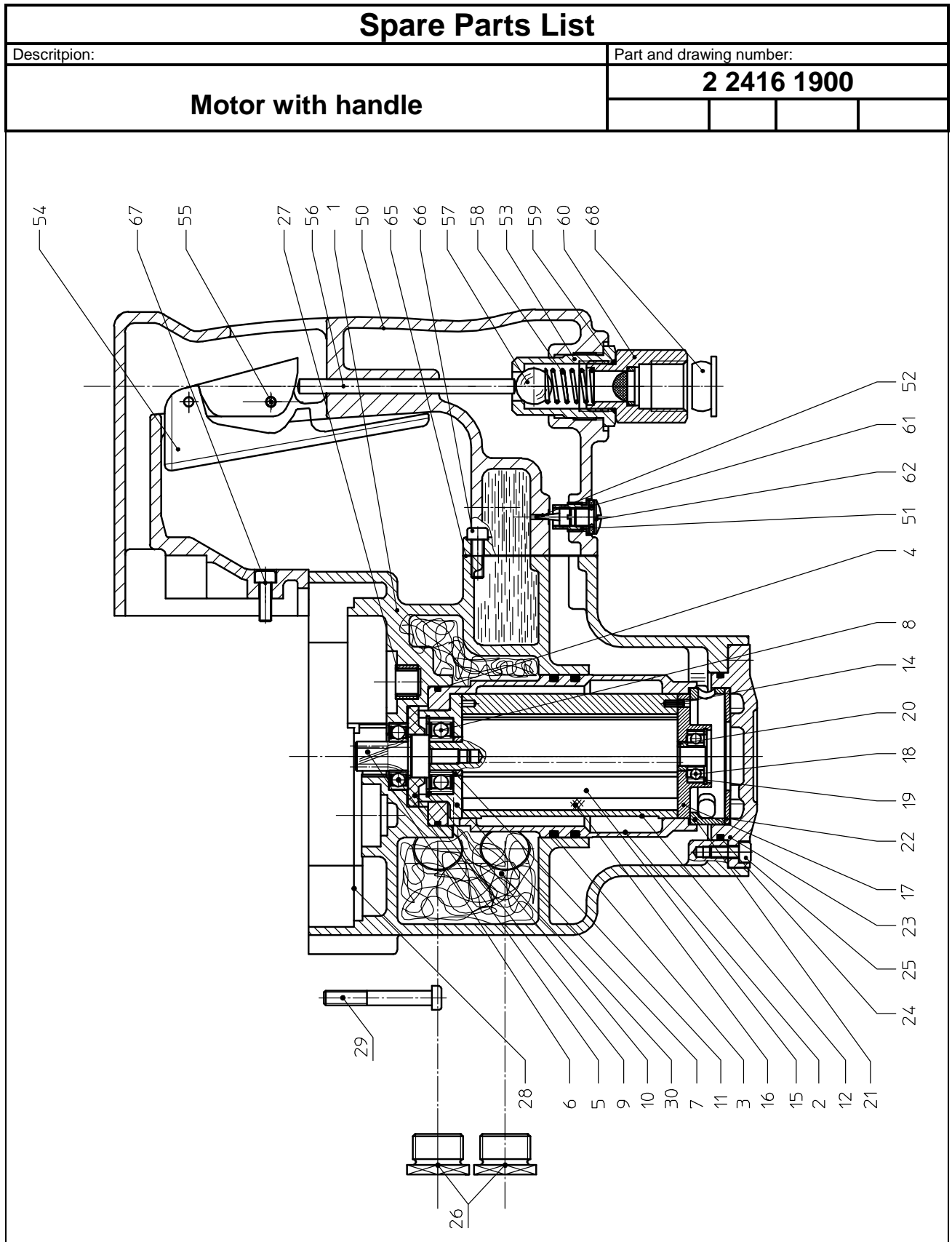
Spare Parts List

Description:	Part and drawing number:			
Pneumatic Rotary Hammer Drill	2 2417 0010			

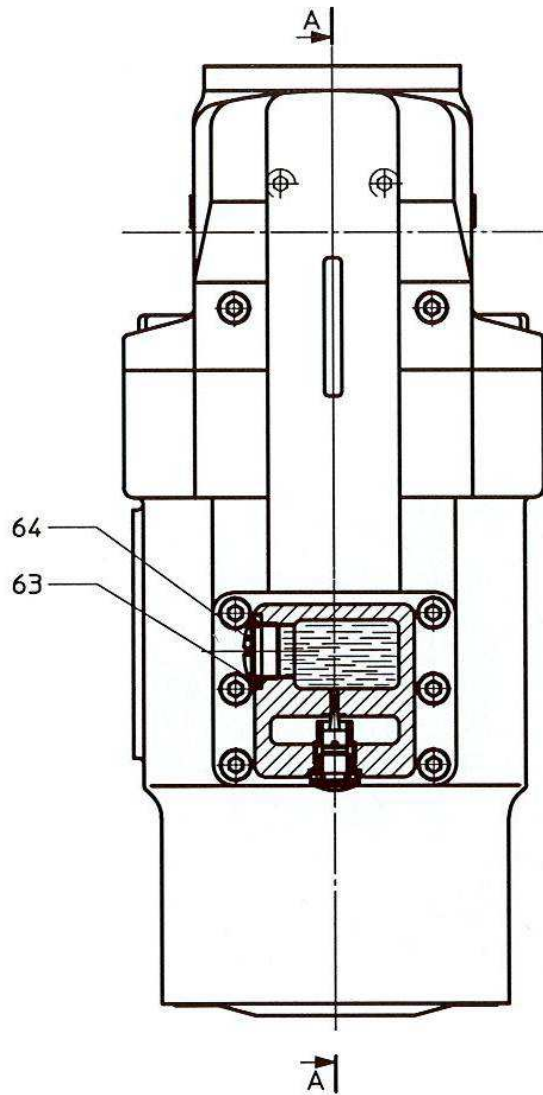


Spare Parts List					
Description			Part and drawing number:		
Motor with handle			2 2416 1900		
Item	Qty.	Description	Part and drawing no.		Remarks
	1	Motor, Assy.	2 2416 1000		item 1-29
1	1	Motor housing, Assy.	2 2414 1910		
2	1	Sealing housing	2 2414 1210		
3	2	O-Ring	9 1901 4450	*	
4	1	O-Ring	9 1901 3890	*	
5	1	Grooved ball bearing	9 1003 0500		
6	1	Pinion	2 2414 4170		
7	1	End plate	5 5010 1100	*	
8	1	Grooved ball bearing	9 1004 0450	*	
9	1	Gasket	2 2414 1120	*	
10	1	Snap ring	9 1703 0100	*	
11	1	Spacer ring	5 5010 1090	*	
12	1	Fillister-head screw	5 5010 1020		
14	1	Tool holder	9 1630 0440		
15	1	Rotor	2 2414 1030		
16	4	Vane	5 5010 1050	*	
17	1	End plate	5 5010 1110	*	
18	1	Grooved ball bearing	9 1001 0040	*	
19	1	Snap ring	9 1703 0030	*	
20	1	Spacer ring	5 5010 1080	*	
21	1	Pressure ring	2 2414 1150		
22	1	Belleville spring washer	9 1801 0140		
23	1	Motor housing cover	2 2414 1130		
24	1	O-Ring	9 1901 3480	*	
25	6	Fillister-head screw	9 1110 3080		
26	2	Silencer	9 3801 1210	*	
27	1	Needle sleeve	9 1014 0470	*	
28	1	Sealing	2 2414 1160	*	
29	6	Fillister-head screw	9 1112 4030		

Spare Parts List					
Description:				Part and drawing number:	
Motor with handle				2 2416 1900	
Item	Qty.	Description	Part and drawing no.		Remarks
	1	Valve handle, Assy.	2 2414 6000		item 50-68
50	1	Valve handle	2 2414 6970		with item 51,52+53
51	1	Threaded bushing	6 1303 5030		
52	1	Adjusting screw	9 1151 9010		
53	1	Valve insert	7 1401 3050		
54	1	Valve pusher	2 2404 6800		
55	1	Double notched taper pin	9 1641 0020		
56	1	Valve pin	9 1637 0280		
57	1	Plastic ball	9 1018 0060	*	
58	1	Pressure spring	9 1803 0250		
59	1	O-Ring	9 1901 3230	*	
60	1	Nipple, Assy.	9 2205 1330		
61	1	Gasket	9 1903 0260	*	
62	1	Locking screw	9 1150 9020		
63	1	Sealing	9 1903 1240	*	
64	1	Locking screw	9 1150 9140		
65	1	Gasket	2 2414 6160	*	
66	6	Fillister-head screw	9 1110 3120		
67	4	Fillister-head screw	9 1110 3120		
68	1	Plug	9 3401 0030		
		* Wear parts to be stored in case of continuous use			



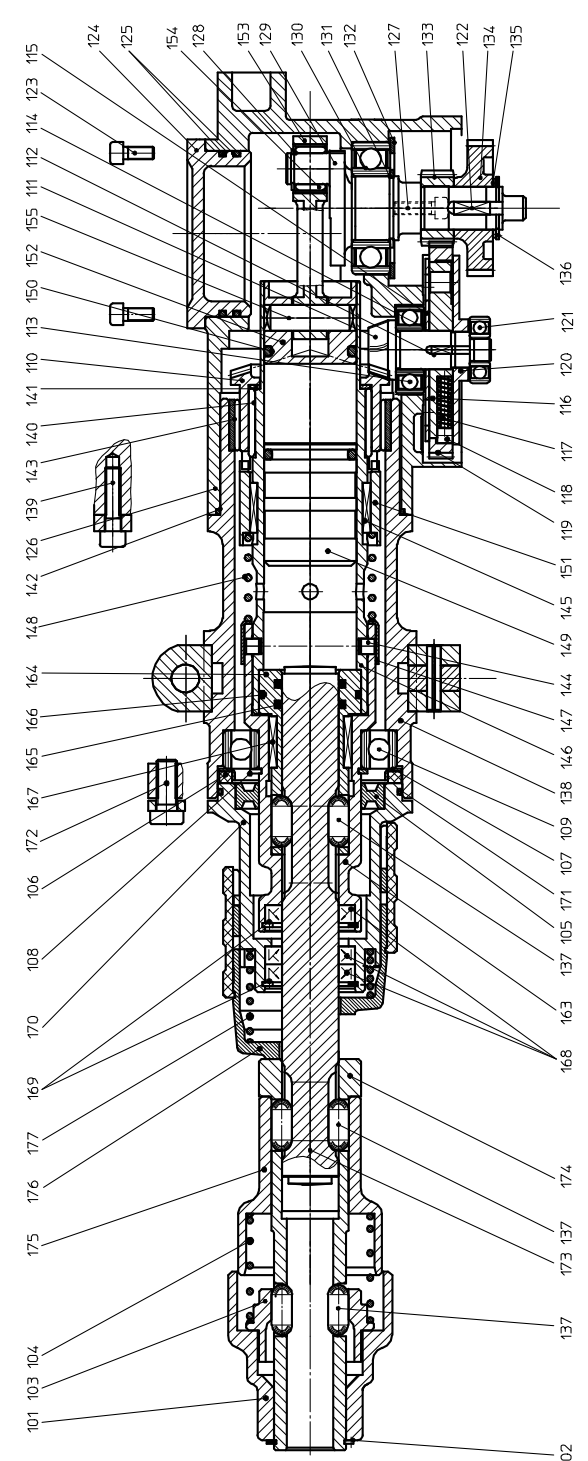
Spare Parts List	
Description:	Part and drawing number:
Motor with handle	2 2416 1900



Spare Parts List					
Description:				Part and drawing number:	
Gearbox head				2 2418 4000	
Item	Qty.	Description	Part and drawing no.		Remarks
101	1	Cap	2 2418 4720		
102	1	Snap ring	9 1702 0150		
103	1	Needle holder	2 2414 4470		
104	1	Pressure spring	9 1803 4750		
105	1	Radial shaft sealing ring	9 1905 0530	*	
106	1	Plastic ring	2 2414 4380		
107	1	Ring holder	2 2414 4390		
108	1	Snap ring	9 1702 0180		
109	1	Grooved ball bearing	9 1003 0090	*	
	1	Coupling, Assy. with bevel gear	2 2416 4920	*	item 110-121
	1	Bevel gear (Pinion+wheel)	2 2417 4950		with item 110-111
110	1	Bevel gear wheel	2 2417 4640		
111	1	Bevel gear	2 2414 4630		
112	1	Feather key	9 1501 1220		
113	1	Grooved ball bearing	9 1004 0160		
114	1	Washer	2 2414 4880		
115	1	Washer	2 2414 4670		
116	1	Support disc	2 2414 4700		
117	8	Pressure spring	9 1803 4780		
118	8	Cylinder roller	9 1016 0490		
119	1	Gear pinion	2 2414 4240		
120	1	Cover disc	2 2414 4770		
121	1	Grooved ball bearing	9 1001 0390		
122	2	Feather key	9 1501 3570		
123	4	Fillister-head screw	9 1110 3080		
124	1	Gearbox housing cover	2 2416 4090		
125	2	O-Ring	9 1901 3480	*	
126	1	Gearbox housing, Assy.	2 2416 4910		
127	2	Fillister-head screw	9 1110 3120		
128	1	Snap ring	9 1702 0050		
129	1	Crankshaft	2 2414 4550		
130	1	Grooved ball bearing	9 1004 0380	*	

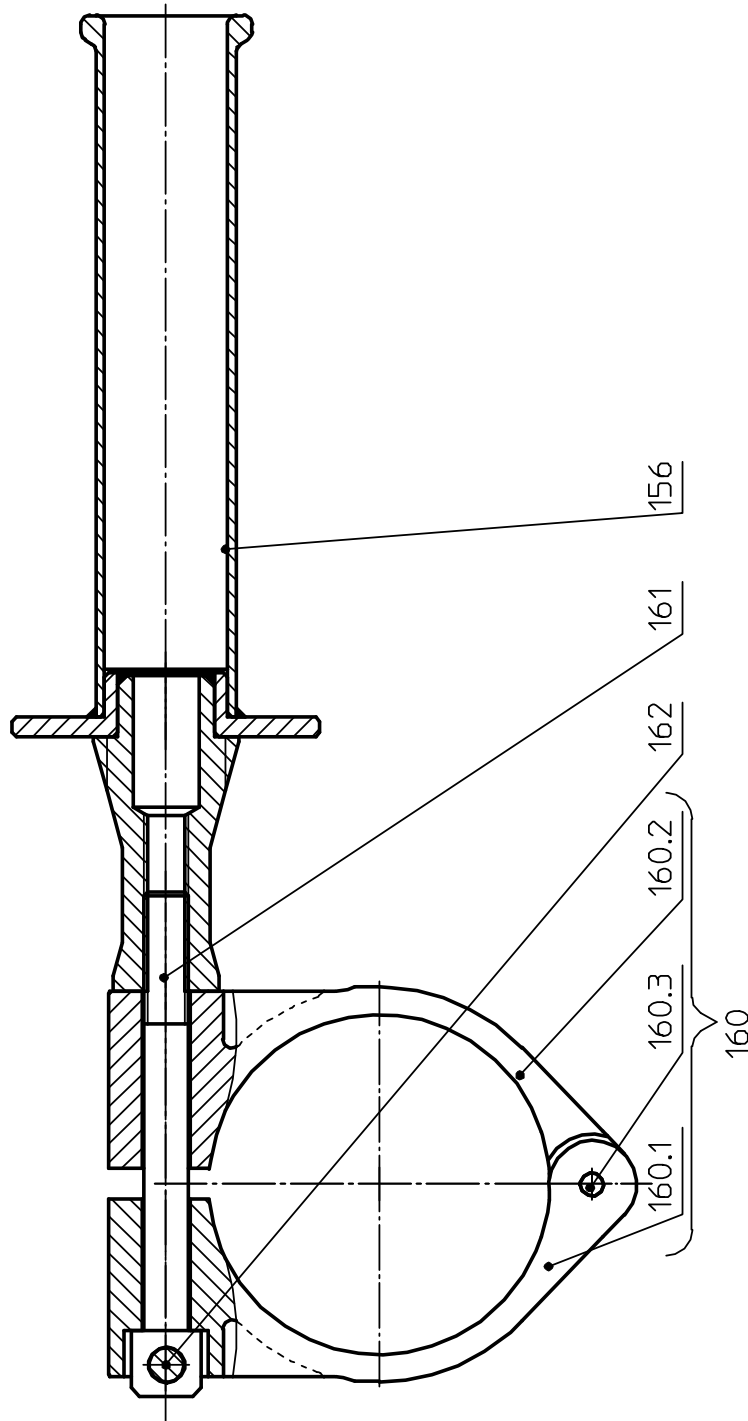
Spare Parts List					
Description:			Part and drawing number:		
Gearbox Head			2 2418 4000		
Item	Qty.	Description	Part and drawing no.		Remarks
131	1	Snap ring	9 1702 0140		
132	1	Bearing cover	2 2414 4160		
133	1	Spur gear	2 2414 4340		
134	1	Spur gear	2 2414 4440		
135	1	Intermediate ring	2 2414 4280		
136	1	Snap ring	9 1702 0100		
137	6	Needle roller	2 2414 4680	*	
138	1	Exhaust housing	2 2418 4510		
139	4	Fillister-head screw	9 1110 4350		
140	1	Needle cage	9 1015 1220	*	
141	1	Disc	2 2414 4370		
142	1	O-Ring	9 1901 3190	*	
143	1	Needle sleeve	9 1014 0480	*	
144	4	Cylinder roller	9 1016 0490		
145	2	Feather key	9 1507 9130		
146	1	Cylinder	2 2416 4600		
147	1	Sleeve	2 2414 4490		
148	1	Pressure spring	9 1803 4760		
149	1	Striker	2 2414 4620		
150	2	O-Ring	9 1921 3590	*	
151	1	Coupling	2 2418 4610		
152	1	Piston	2 2414 4520		
153	1	Connecting rod	2 2414 4530		
154	1	Needle bearing	9 1013 0290	*	
155	1	Gudgeon pin	2 2414 4560		
156	1	2. handle	2 2415 6910		
160	1	Handle holder, Assy.	2 2414 6950		
161	1	Handle bolt	2 2414 6920		

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Description:				Part and drawing number:	
Gearbox head				2 2418 4000	
Item	Qty.	Description	Part and drawing no.		Remarks
162	1	Depth stop	2 2414 9100		
163	1	Retainer sleeve	2 2418 4300		
164	1	Centring sleeve	2 2417 4370		
165	2	O-Ring	9 1901 4330	*	
166	1	O-Ring	9 1901 5610	*	
167	2	Feather key	9 1501 3340		
168	3	Shaft sealing ring	9 1905 1630		
169	2	Snap ring	9 1703 0110		
170	1	Cover	2 2418 4190		
171	1	O-Ring	9 1901 3190	*	
172	4	Fillister-head screw	9 1112 5180		
173	1	Output shaft	2 2417 4730		
174	1	Tool holder	2 2418 4740		
175	1	Guide tube	2 2418 4700		
176	1	Adjusting sleeve	2 2417 8950		
177	1	Twist/Pressure spring	9 1807 0240		
		* Wear parts to be stored in case of continuous use			

Spare Parts List	
Description:	Part and drawing number
Gearbox head	2 2418 4000
	

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Gearbox head	2 2418 4000			
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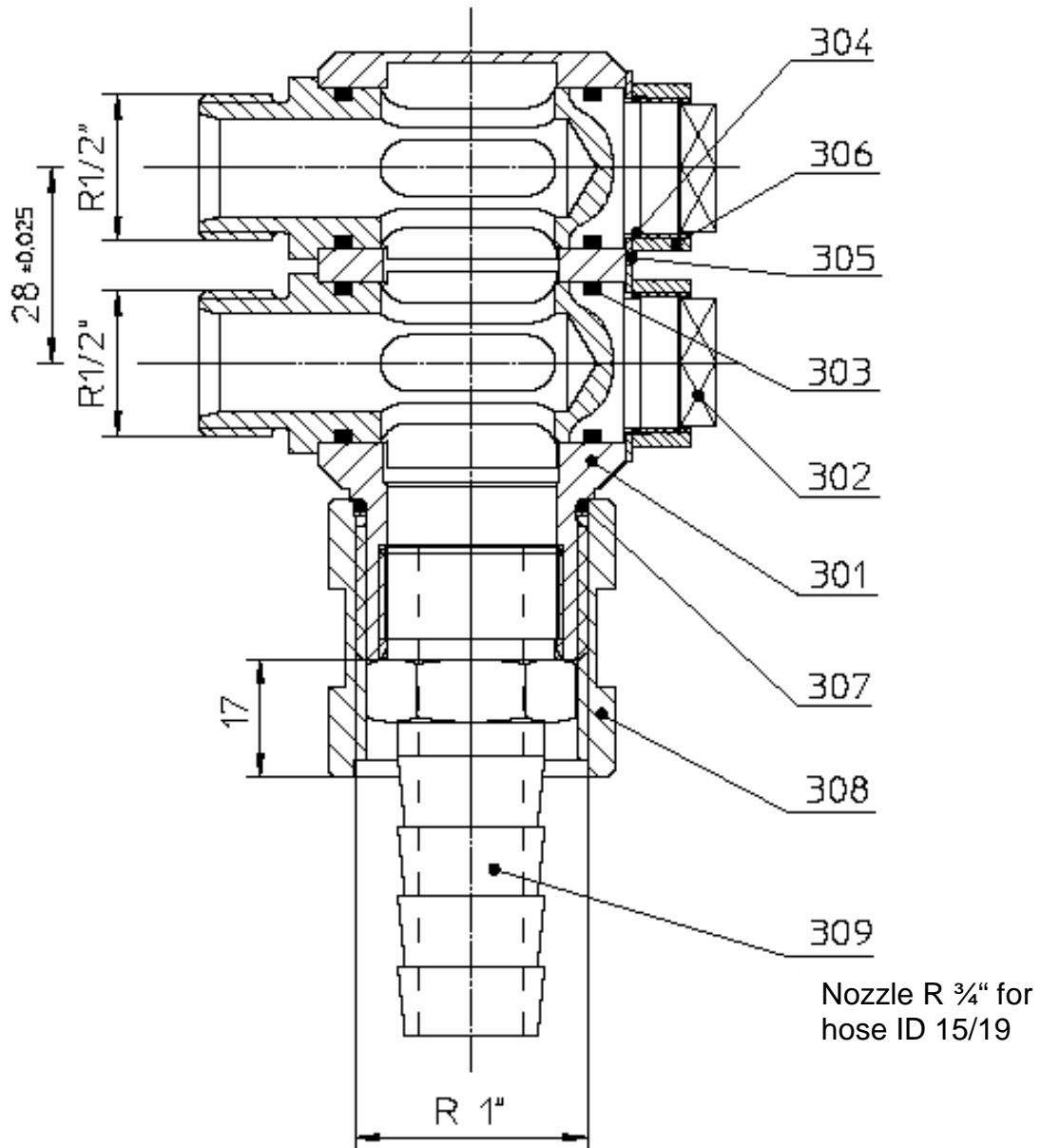


Pneumatic Rotary Hammer Drill
 2 2417 0010

Spare Parts List					
Description:				Part and drawing number:	
Output Connection for underwater use				2 2416 9000	
Item	Qty.	Description	Part and drawing no.		Remarks
301	1	Connection housing	2 2416 9120		
302	2	Connection pipe	2 2416 9110		
303	4	O-Ring	9 1921 2960	*	
304	2	O-Ring	9 1901 2790	*	
305	2	Feather key	9 3331 2350		
306	2	Clamping nut	2 2416 9140		
307	1	O-Ring	9 1901 3180	*	
308	1	Connecting nut	2 2416 9130		
309	1	Hose nozzle	3 9201 3500		
		*Wear parts to be stored in case of continuous use			

Spare Parts List

Description:	Part and drawing number:
Output Connection for underwater use	2 2416 9000



Spare Parts List

Description:	Part and drawing number:
Output Connection for underwater use	2 2416 9000

